

UKAEA

**Particles Best
Practicable
Environmental Option
Public Consultation**

Record of January 2006 Exhibitions and
Outreach Meetings

May 2006

Entec UK Limited

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Document Revisions

No.	Details	Date
1	First draft	3 March 2006
2	Second draft	7 April 2006
3	Final	15 May 2006

Executive Summary

UKAEA is committed to engaging stakeholders as part of the Best Practicable Environmental Option (BPEO) study on the management of radioactive particles. UKAEA embarked on the process of engaging with stakeholders in January 2003. Throughout December 2005 and January 2006, Stage Two of the engagement process was carried out. This included the publication of a series of documents, making these documents available through the UKAEA website or on request, forwarding '*Public Participation Newsletter, 5 Radioactive Particles in the Environment*' to a list of stakeholders already registered by UKAEA, publicising the process and running a series of exhibitions and outreach meetings with stakeholder groups.

This report presents a record of the exhibitions and outreach meetings held as part of Stage Two in January 2006. This report does not include interpretation or analysis of comments and responses made. Analysis is presented in the report '*Analysis of the December 2005 – January 2006 stakeholder engagement*', May 2006.

Exhibitions were held in Thurso and Wick between 9 and 12 January 2006. The exhibitions were attended by 219 people. A range of information was provided at the exhibitions including background information on particles, current management practices, possible management options and possible criteria to be used for option evaluation. The series of documents were also available at the exhibitions which were facilitated by UKAEA and Entec UK Ltd staff. Attendees' queries and questions were answered wherever possible, during or after an event. Attendees were encouraged to complete questionnaires at the exhibitions or return using a freepost address.

In addition to the exhibitions, 15 outreach meetings were held comprising 13 groups of stakeholders between 13 and 19 January 2006. A total of 89 people were involved in the meetings that were facilitated by Entec UK Ltd and Alison Millward Associates.

The evaluation feedback shows that attendees of both the exhibitions and outreach meetings found the information useful and informative and they considered attending worthwhile. There was considerable interest in the current management arrangements and the basics regarding particles such as where they came from, how they got into the sea, where they are found, current monitoring arrangements and the risk to humans. A considerable number of participants of the outreach meetings expressed a desire to continue to be involved in the stakeholder engagement process regarding particles.

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1. Introduction

UKAEA is committed to engaging stakeholders as part of the Best Practicable Environmental Option (BPEO) study on the management of radioactive particles. The stakeholder engagement process comprises four stages:

- Stage One: launch of the consultation;
- Stage Two: initial stakeholder engagement on the particles issue, management options and BPEO assessment criteria;
- Stage Three: consultation on BPEO options and assessment criteria weighting; and
- Stage Four: consultation on the draft BPEO.

Stages One and Two are now complete. The objective of Stage Two was to undertake ‘front-end’ stakeholder engagement prior to consulting fully on a BPEO, specifically to:

- Consider the overall BPEO objective;
- Consult on the completeness of the identified options; and
- Consider completeness of proposed attributes.

This report presents a record of exhibitions and outreach meetings held as part of Stage Two in January 2006. This report does not include interpretation or analysis of comments and responses made. Analysis is presented in the report ‘*Analysis of the December 2005 – January 2006 stakeholder engagement*’, May 2006¹.

The views expressed in this report are not those of Entec or UKAEA but are a compilation of those views and perceptions expressed by stakeholders in the stakeholder engagement. By writing this report, Entec is not agreeing or disagreeing with the comments made by stakeholders and therefore accepts no responsibility for the technical content or accuracy of comments made by those stakeholders. For technical information, reference should be made to the UKAEA documents *Public Participation Newsletter Number 5, Determining a Strategy for Managing Radioactive Particles in the Environment*, *Dounreay Particles BPEO Options and Attributes Document* and *The Dounreay Particles Technical Résumé*.

¹ Available on the UKAEA’s website.

2. Public Exhibitions

2.1 Exhibition Details

Public exhibitions were held in Thurso and Wick between 9 and 12 January 2006. The following table presents a summary of the exhibition details.

Table 2.1 Exhibition summaries

Thurso exhibition	
Dates and times	9 January 2006, 10.00am-5.00pm and 10 January 2006, 2-8.00pm
Location	Thurso Town Hall
Number of attendees	97
UKAEA representatives present	Joe Toole, June Love
Entec representatives present	Daren Luscombe, Nienke Pengelly
British Sign Language /English signer present	5-7.00pm 10 January

Wick exhibition	
Dates and times	11 January 2006, 10.00am-5.00pm and 12 January 2006, 2-8.00pm
Location	Wick Assembly Rooms
Number of attendees	122
UKAEA representatives present	Frank Dennis, June Love
Entec representatives present	Daren Luscombe, Nienke Pengelly
British Sign Language /English signer present	5-7.00pm 12 January

The exhibitions included the following materials (also available on the UKAEA website):

- 14 x display panels covering:
 - Introduction to the project;
 - What is a particle?
 - Where have particles been found?
 - What are we doing today?
 - Are they a risk to human health?
 - Management of particles;

- Options that have been identified;
 - The need to combine onshore and offshore options to develop a management strategy;
 - Proposed criteria to be used to evaluate options;
 - How to get involved and what happens after this stage of the stakeholder engagement; and
 - A list of institutional stakeholders.
- Copies of the Public Participation Newsletter Number 5, *Determining a strategy for managing radioactive particles in the environment* with a feedback questionnaire inserted;
 - Copies of the document *Dounreay particles BPEO. Options and attributes document*; EPD(05)240, Issue 1, 12 December 2005; and
 - Copies of the document *The Dounreay particles technical résumé*, EPD(05)P239, Issue 1, 12 December 2005.

2.2 Exhibition Process

On entry, attendees were offered refreshments and a brief explanation of the types of information available. The attendees were then encouraged to take time to examine the display panels and consult one of the UKAEA or Entec representatives with any queries and clarifications they may have. UKAEA and Entec representatives then allowed attendees time to examine information periodically checking whether or not attendees had any queries. Where it was not possible to answer queries, this was recorded.

Attendees were encouraged to complete a feedback questionnaire either at the exhibition and post it in the trays provided or to take the questionnaire away and return using the freepost address. Attendees were offered copies of the *Public participation newsletter number 5* and questionnaire and also *Options and attributes* and/or the *Technical résumé* documents when appropriate, e.g. when they requested further detailed information or the exhibition representatives considered the attendee might find further information of interest.

The general impression from attendees was that they found the information useful and informative and they considered attending worthwhile. There was considerable interest in current arrangements and the basics regarding particles such as where they came from, how they got into the sea, where they are found, current monitoring arrangements and the risk to humans.

3. Stakeholder Groups and Meeting Process

3.1 Stakeholder groups

A total of 13 groups were selected for the outreach meetings. The groups were selected on the basis of their representation across a range of criteria including:

- Beach users;
- Dunnet community members;
- Economic interests (local and strategic);
- Environmental interests;
- Hard to reach groups (e.g. the young and carers of children);
- Health interests;
- Inshore sea users (i.e. use close to the shore)
- Reay community members; and
- Social interests (cultural / heritage).

The selected groups are listed below:

- Creel fishermen, diving and yachting group;
- The Dounreay Stakeholder Group;
- Dunnet community group;
- Environment group;
- Health group;
- Pre-school children carers group;
- Reay and Melvich community group;
- School group;
- Scrabster harbour group;
- Sea Cadets and Sea Scouts group;

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- Socio-economic group²;
 - Surfers and kayakers group; and
 - UKAEA employees/contractors groups.

It should be noted that it was not possible to recruit creel fishermen to the creel fishermen, diving and yachting group; this group is therefore referred to hereafter as the diving and yachting group. It should also be noted that the Dounreay Stakeholder Group is a permanent stakeholder liaison group that meets regularly.

Fifteen outreach meetings were held, one of each stakeholder group except for the Dounreay employees/contractors group of which three meetings were held. A total of 89 people attended the meetings that were held between 13 and 19 January 2006.

3.2 Meeting process

Wherever possible, participants were forwarded a copy of the Newsletter 5 together with a letter explaining what to expect at the meeting in advance. The meeting was typically structured as follows:

- **Introduction:**
 - Introducing who Entec and/or Alison Millward Associates were and their role in the particles stakeholder engagement process and the meeting;
 - Introducing the UKAEA technical representative, explaining their role (as technical advisors only in the event of any queries) and confirming with stakeholders that they were comfortable with an UKAEA representative being present;
 - Explaining that the programme of outreach meetings was part of a wider package of measures in connection with the particles BPEO 'front-end' consultation. In particular, stakeholders' attention was drawn to the public exhibitions that had taken place in Thurso and Wick the previous week and the newsletter and associated questionnaire that had been circulated widely, was available on the UKAEA web-site and that most participants had received prior to the meeting; and
 - Explaining the format and timings of the outreach meeting.
- **Part 1:** providing background information using A3 sized versions of the exhibition boards on a presentation pack. This sought to ensure that all attendees were approaching the particles debate with common information. This part included a question and answer session regarding particles (e.g. where they came from, how they got into the sea, where they are found, current monitoring arrangements);

² Note that this group was a group of stakeholders with socio-economic interests and was not the Caithness Socio-economic Strategy Group formed in 2005.

- **Part 2:** a discussion regarding stakeholders concerns about particles and the broader effects of the issue followed by a discussion regarding how the presence of particles affects stakeholders' behaviour. Stakeholders were asked to give their own perspective but also those of others known to them from among their family, friends, the local community and those beyond (e.g. from outside Caithness and Sutherland);
- **Part 3:** a discussion regarding how stakeholders would like to see the beaches and the offshore environment affected by particles being used in 20 years time;
- **Part 4:** a debate around the potential options (onshore and offshore) for dealing with particles in the environment. This incorporated discussion around option preferences and additional options and measures other than those identified by UKAEA to date;
- **Part 5:** a debate on the list of criteria identified by UKAEA to date to evaluate the options. This included discussion on what were considered the most important criteria and additional criteria that might be considered in the assessment; and
- **Summing up:** the facilitator summarised the discussion, fed back the key points raised back and explained what would happen afterwards namely: that Entec's final record on the results of the outreach meetings was to be with UKAEA by the end of March 2006, copies would be sent to all attendees and it would be made publicly available on the UKAEA website. It was also explained that UKAEA would review the options and criteria over the summer and aim to consult stakeholders on a preliminary BPEO in autumn 2006. An evaluation questionnaire for the meeting was either provided at the end of the meeting or forwarded by post to participants.

As with the exhibitions, the evaluation feedback from attendees was that they found the information and discussion useful and informative and they considered attending worthwhile. A considerable number expressed a desire to continue to be involved in the stakeholder engagement process regarding particles. Analysis of the meeting evaluation forms will be included in the Stage Two report.

Records of the meetings are presented in Appendix A.

Appendix A

Records of outreach groups

Diving and yachting group

The Dounreay Stakeholder Group

Dunnet community group

Environment interest group

Health group

Pre-school children carers group

Reay and Melvich community group

School group

Scrabster harbour group

Sea Cadets and Sea Scouts group

Socio-economic group

Surfers and kayakers group

UKAEA employees/contractors groups

Diving and yachting group

Date, time and venue of meeting

13 January 2006, 5-7.00pm, Weigh Inn Thurso

Attendees

Jayne Henderson (Pentland Firth Yacht Club)

Karen Singer (Caithness Diving Club)

Tom Peat (Pentland Firth Yacht Club)

One attendee did not return the form indicating permission to publish their name and hence their name is withheld

Facilitator

Daren Luscombe

UKAEA technical attendee

June Love

Background

Questions and comments raised by stakeholders:

- Divers do not use Sandside due to there being nothing of interest there with regard to diving.
- When diving, the amount of time spent on the seabed is little, therefore contact through this route is not likely.
- Other risks are more important than those from particles e.g. for yachters, risks posed by sewage in the sea and on beaches.
- Suggest taking the options and information to 'the kids' as part of their curriculum to increase understanding and awareness.

Concerns and effects on behaviour

Concerns:

- Risk would not be acceptable if particles were found at the beach at Scrabster and children were launching boats.
- Concern over the affect on tourism e.g. other yachters coming to use waters and fearing coming into the area.
- Concern that standards would be ratcheted and the particles currently considered 'low risk' could be reclassified as 'higher risk'.

Effects:

- ‘Guesstimate’ that 50% of people in Caithness do not visit Sandside due to the particles issue [note: this could not be substantiated].

Aspirations

- Good perception / better perception of the area.
- Improve understanding of the issue.
- Improve understanding in terms of monitoring and management.
- Doing the best capable of and what is necessary at the present time.

Options

Preferences

- Do not want beaches closed as this will restrict access for diving / sailing. This ‘cure is worse than the problem presented’.
- Extensive digging up of the seabed could alter currents and affect diving – would not favour such options.
- Do not want high cost solution as this would be out of proportion with the nature of the problem and would send out the wrong message with regard to the nature of the issue.
- Onshore - there was a general consensus that the current monitoring arrangement is the best that can be done and no additional beaches should be monitored
- Onshore – there is a need for public education in the issue to increase understanding.
- Offshore – should recover particles when found.
- A 5 and 10 year review of the management strategy should be integrated to ensure that it is working and that it remains appropriate.

Additional suggestions

- When removing the diffuser, build a coffer dam and remove any area of higher concentration of particles.
- Passive dredging – underwater groins that use the general eastward longshore drift, either pushes sand and particles further out to sea into deeper water or encourage drift towards the shore where sand could be monitored.

Criteria

Confirmation

[No one objected to any]

Additional

- Permanent versus temporary fix (to reduce need to redo).

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- Include both positive and negative cost benefits.
 - Ability to generate local employment where contractors are based locally rather than flown in for the short-term.

Priorities

- No clear message on priorities – some feeling that environmental criteria are the most important and health and safety naturally follow.
- Some feeling that the order of the list in the Newsletter was a reasonable order of priority for the criteria.

Facilitator's impressions

This group did not see the risk as being significant, indeed the risks associated with diving and yachting were seen to be of more importance and other risks such as those presented by sewage in the sea were seen as more important. There was however, a feeling that this did not mean that nothing should be done. The particles issue had not affected behaviour for the group however they considered that the issue has affected others, particularly with regard to visiting Sandside Bay. The group was also concerned about the perception of others from outside the area and the affect this may have on their willingness to visit the area.

The group felt that the current arrangements onshore were adequate but felt that if particles were located offshore they should be recovered (rather than the current practice of using an ROV to locate but not retrieve particles). The group also felt that the scale of the management should be appropriate to the risk presented meaning that large, expensive, capital intensive management options should be avoided. The group come up with additional offshore options, namely integrating the management of the particles with the decommissioning of the diffuser chamber by constructing a coffer dam around the diffuser and removing concentrations of particles and consideration of the use of 'passive dredging' using underwater groins to steer sand and particles to desired areas for management. The group also suggested that the strategy should be reviewed periodically.

The group were keen on more and better information being made available to the public so that decisions could be made and also, providing information to children through schools to increase understanding and awareness.

Post meeting comments

On feedback on a draft of this meeting's record, the following additional option was suggested:

'The passive dredging or probably better described as tide assisted dredging, envisaged collecting silt using groins. A different approach could use trenches dug in the seabed. Such a trench could be created perpendicular to the coast across the tide flow directions. This trench would fill with silt each time the effects of tide, and or storm, were strong enough to move the surface silts. The trench could then be dredged intermittently using a suction pipe.

The rate of silt collected by the trench, from each tidal direction, must be greater than the rate of silt moved by long shore drift. This would create a net movement of silt into the trench from both directions, carrying the particles with it. This silt could be processed to remove particles and returned much further along the coast to replace that removed by the process. Over time this process would clean the silts of particles without the need for bulk dredging of the seabed.

Such a trench, or several trenches, would not upset the seabed too much and keep the dredging equipment at the trench locations. The opportunity to create such a seabed trench may occur when the diffuser is removed by cofferdam methods.

(It is interesting to think that the continuous removal of silt from the hole left by removing the diffuser may have the same effect. Putting the genie back in the bottle!)

Dounreay Stakeholder Group

Date, time and venue of meeting

18 January 2006, 6.00-6.30pm, Pentland Hotel, Thurso

Attendees

One member of the Dounreay Stakeholder Group attended – name withheld to preserve anonymity of comments. [Other members of the Dounreay Stakeholder Group had taken part in other outreach meetings or had visited the exhibitions].

Facilitator

Alison Millward

UKAEA technical attendee

None present

Background

- Former employee of Dounreay. Continues to live nearby.
- Re restriction of access offshore – never found any radioactivity in fish etc, but, if restriction was lifted, the fishermen would clear it out within a short while. Fauna good now because scallop dredgers cannot go in there.
- Was aware of numerous references to the particles issue having been in existence before current landowner bought Sandside estate.

Concerns and effects on behaviour

Concerns:

- No concerns about the particles issue because the chances of picking one up are x millions to one, let alone ingesting one. “Who eats sand?”
- It’s the Sandside landowner that has caused the problem and there is a consensus in the village about that.
- Surfers Against Sewage have raised concerns about Sandside.

Effects:

- Whilst he and his family continue to use Sandside, some of his visitors refuse to go there.
- Potentially, local residents may make a compensation claim if the Sandside landowner wins compensation for loss of access, or receives payment for agreeing access for UKAEA.
- In the 1980s, schools, Sunday schools and the Reay community had picnics on the beach. This no longer happens because some parents objected.
- Golf Club is not getting as many users as it used to.

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- Sandside was very good for surfers of all kinds, but is not used by them now. If no swell at Thurso East, they will travel further to Melvich or Betty Hill.

Aspirations

- Would like to see continued monitoring, but not as frequently as happens now at Sandside. The signs are over the top and should be removed in the longer term.
- Could provide a visitors' board to give reassurance re the monitoring work.

Options

Preferences:

- Must continue to do 2 and 9.
- No to 3, 4, 5 and 6.
- 7 would be a complete waste of money.
- Yes to 10.
- 11 would be a waste of money. We know where they are offshore.
- No to 12 and 13. 14 would definitely not do – tried at Dounreay beach in the past.
- No to 15, 16, 17, 18, 20 and 21.
- Could 19 be done?

Additional suggestions:

- It's a political issue now, which has been raised beyond its significance. Therefore, we should not spend any more tax payers' money on it.
- Might just be possible for a local consortium to buy Sandside for the price the current landowner paid for it in 1990.

Criteria

Confirmation:

- [No comment made].

Additional:

- None suggested.

Priorities:

- Socio-economic because issue has already had an effect although would be difficult to put a price on this.
- Assessment against routine risks is important because the RPB says this is not a problem. This criterion provides reassurance.

Facilitator's impressions

This stakeholder was comfortable with the information and had visited the exhibition.

Dunnet community group

Date, time and venue of meeting

14 January 2006, 10-12.00am, Britannia Hall, Dunnet

Attendees

Barbara Hiddleston (Resident)

Harriette Teenwen (Resident)

One attendee did not return the form indicating permission to publish their name and hence their name is withheld

One attendee requested that their name be withheld

Facilitator

Daren Luscombe

UKAEA technical attendee

June Love

Background

Questions and comments raised by stakeholders:

- A number of questions were raised relating to the source of particles, the risk to human health and the future plans for monitoring.
- Dunnet beach is a key asset to the community and the economy.

Concerns and effects on behaviour

Concerns:

- Warning signs with no proper explanation can cause damage. Better information is needed. The signs should be less scary and provide more factual information with which people can make judgements.
- Not being able to interpret what the signs really mean causes concern.
- It is hard to measure the effect on people outside Caithness.
- Potentially a worse problem by carrying out large-scale retrieval due to environmental impact and image problems.

Effects:

- The finding of a particle at Dunnet beach has not stopped visits to the beach with family.
- Aware of colleagues that have said that they are not allowing free play (i.e. collection of sand, shells and stones) when taking their children to Dunnet beach following the particle find in March 2005. Parents anxious initially following the particle find.

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- From a local perspective, concerned of image effect rather than actual risk. There is a debate to be had regarding the actual risk versus the perception of risk.

Aspirations

- Beaches used as they are now.
- Highest environmental standards available to the community and visitors including water quality, litter and cleanliness.
- The solution must be in balance with addressing beach quality in a broad sense. A holistic approach to managing beach quality is required taking account of issues such as coliform count and litter and waste washed up. Environmental quality and risk is more than that related to radiation.
- Concerned about other issues such as dog mess, glass, dead animals and the risks these present. Would like to see these addressed.
- For beach monitoring to be used as a positive aspect, e.g. 'highly monitored beach and only one particle found in x years since 2005'.
- Would want to be able to carry out the two beach cleans per year of Dunnet without fear or concern.

Options

Preferences:

- For onshore, monitoring as a minimum.
- Restricting public access is not a favoured option.
- The option must be cost effective in relation to risks.
- For offshore, there was no consensus. If the particles are offshore perhaps there is no problem, perhaps this is the best place for the particles to reside and it is best to leave them where they are

Additional suggestions:

- Options should be reconsidered in a hierarchy, e.g. if particles are found more frequently or particles of a higher activity are found, then monitoring frequency should increase or restrict access if problem becomes worse, or provide information and allow individuals to make their own judgement.

Criteria

Confirmation:

[No one objected to any]

Additional:

- The effect on the use of beaches, i.e. disruption to their use and enjoyment.
- The effect on the Dunnet beach as a key social and economic asset.

Priorities

- Need to value environment, social and economic as the most important criteria.

Post meeting comments

‘Generally very happy with the meeting and its facilitation and also the resulting [draft] report. Important to emphasise the temporal aspect and the shift in opinions and beach usage some months after press coverage, removal of signs, i.e. return to perceptions of ‘2004’ with the passage of time.’

Facilitator’s impressions

This group’s comments were particularly focussed on the affect on Dunnet beach. Whilst the particle find on Dunnet beach in March 2005 had not affected the behaviour of the members of the group, they were aware of people who are anxious of allowing children to play on Dunnet beach, at least initially following the find. The group was concerned about the affect on the beach’s image that the particle find will have and the quality of information available at the beach – it was considered that the signs were ‘scary’ and did not help people understand the issue, level of risk presented and what was being done about it – they were of little value.

There was a feeling within the group that the radiological issue needs to be seen and communicated in a broad sense when considering environmental quality. There was a strong feeling that environmental quality included a range of issues including sewage, litter and dog mess and that the particle issue should not be seen to dominate when these other issues may be equally/more important. There was an interesting point made with regard to monitoring – seeing this as a positive aspect providing reassurance rather than a negative one.

The group felt that monitoring should be carried out as a minimum and did not have any appetite for restricting access to beaches (in favour of information and people making their own decisions) or for major, costly options involving significant engineering. It was suggested that the degree of monitoring should be reviewed over time dependent on the frequency and significance of any finds.

Environment interest group

Date, time and venue of meeting

17 January 2006, 1-3.00pm, Dunnet Ranger Centre, Dunnet

Attendees

David Glass (Dunnet Head Educational Trust)

John Crowden (Castletown Community)

Mary Legg (Highland Rangers)

Will Menzies (Dunnet Forestry Trust)

Two attendees did not return the form indicating permission to publish their names and hence their names are withheld

Facilitator

Daren Luscombe

UKAEA technical attendee

Fiona Henderson

Background

Questions and comments raised by stakeholders:

- Non-recorded.

Concerns and effects on behaviour

Concerns:

- Particles are not an issue and the risk of harm is low. By standards usually applied to 'risks' to other safety assessments the risk is low. Do not believe there is a significant risk to the public.
- 'Certain parties involved' overplay the real health issue in the media.
- The level of effort is out of proportion to the risk presented.
- If information were presented to the public, sewage would be more likely to be cause a problem / risk.
- Perception is the real issue.
- The issue creates uncertainty about current practices in the nuclear industry.
- Education on statistical risks is needed, 'the notice is daft'.
- Signs are there to manage financial and insurance risks rather than actual risks presented.
- Emissions to the environment and pollution resulting from management options involving significant fuel use in vehicles.

Effects:

- The effect on the caravan site is uncertain, 2006 will be the real test following the signs going up in 2005.
- Locally people are not bothered (about the find on Dunnet beach) but have had instances of non-locals wanting to be scanned when leaving the beach in 2005 – ‘they don’t live with Dounreay’.
- The effect of having no beach clean following the particle find has been concerning. No beach clean results in a dirty and littered beach. Other risks now presented are more significant than the particles, e.g. empty chemical containers, glass, dead animals. It appears a perverse outcome that without a beach clean there may now be more risk to health and safety than was previously the case.
- A geomorphologist to be used to advise on grass planting to manage the dunes would not visit following the particle find.
- Impacts on various arts and social events which would have utilised the beach.

Aspirations

- Would like the book closed on the issue, for it to be a memory.
- For there to be no need to monitor.
- Public perception to be OK – or to have no negative effects.
- For Dunnet to be used and contribute to tourism in Caithness.

Options

Preferences

- Onshore – monitoring and retrieval should continue, this would be logical and should be part of normal practice. Can then say that x finds in so many years.
- Frequency of monitoring to be related to particle find frequency i.e. reduce if find fewer particles over time.
- Onshore – concerned on the effect on the fragile ecosystem that large scale engineering options would have and would want to avoid these.
- Offshore – consider that sand is too mobile to manage effectively through dredging / digging / sorting.
- Gut reaction to large engineering projects is that the gain is limited and the cost too large.

Additional suggestions

- Offshore - particle recovery close to land rather than deeper offshore – creating a barrier to movements onshore.
- Require education of the nature and level of risks compared to others – a crucial issue to be part of management options. Need to publicise positive aspects of managing particles in a balanced manner.

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- Require more openness between SEPA / HC / Rangers / UKAEA on the issues to help provide useful information.
 - Take the opportunity to remove any concentration of particles around the diffuser when this is decommissioned.

Criteria

Confirmation

- It was suggested that there are two ways of looking at priorities – those criteria most important to individuals (cost, health and safety and socio-economic) and those more suited to differentiating between the options in a broad sense (cost and the effect on flora and fauna).

Additional

- Distinguish between costs / benefits to the taxpayer, the nuclear sector, commercial companies, Highland GDP.
- Include the justification of expense through cost benefit analysis (i.e. the cost of deaths avoided by the option).

Priorities

- For individual's priorities, there were two camps, those who considered cost and health and safety to be most important and those who considered the most important to be health and safety and socio-economic criteria.

Facilitator's impressions

The group considered that the actual risk presented by particles was low and that better information was needed to enable people to make informed decisions. There was dissatisfaction with the signage at present at Dunnet beach. There was a feeling that the particle find on Dunnet beach had not affected local peoples' behaviour but may influence those from outside Caithness. The effect on the caravan park will not be fully understood until later in 2006 but the reluctance of a geomorphologist to visit to advise on grass planting and dune conservation is indicative of reactions that those from outside the area may have – in this case resulting in a loss of expertise to manage the environment.

The lack of beach clean was of considerable concern and it was generally the view that the risks presented by material not cleared from the beach was greater than that presented by particles, in addition the litter was unsightly.

Whilst commenting that the risk is low, monitoring of the beach was considered necessary. The frequency of monitoring being balanced with the frequency of particle finds. There was no appetite for large-scale onshore engineering operations that seemed out of proportion to the risk presented and would result in damage this delicate ecosystem. There was a strong desire to increase the quality of information available to people as part of the management process – the current signage was seen as inadequate.

Post meeting comments

On feedback on a draft of this meeting's record, the following further comments were made:

-
- Regarding openness of information between SEPA / HC / Rangers / UKAEA, that ‘There was plenty of e-mailing but it’s easier to get round the table to talk’;
 - Regarding information provision, it ‘would be good to have information on [the] progress of monitoring as this is useful. Particularly if nothing is found. [There would then be a] better perspective on [the] situation that way’;
 - That the frequency of monitoring could only be reduced after ‘x’ time with no particles discovered and should continue until ‘x’ time with no particles found;
 - Regarding education on risk there was a potential problem with ‘spin’ when comparing risks; and
 - One years seeding is ten years weeding. Too many cover ups or lack of openness and honesty in past has clouded public perception adversely, rightly or wrongly. Once a doubtful seed has been planted it takes a lot of work to remove or convert it. Honesty is best policy. Education re. problem is vital to get it in perspective. Cost should not be a consideration but obviously it will be.

Health group

Date, time and venue of meeting

18 January 2006, 3-5.00pm, Conference Room, Wick General Hospital

Attendees

John Bogle

Lyn Morrison

Joanne McNicol

One attendee did not return the form indicating permission to publish their name and hence their name is withheld

One attendee requested that their name be withheld

Facilitator

Claire Brown

UKAEA technical attendee:

Frank Dennis

Background

Following an explanation of the background information, there was an extensive question and answer session, which broadly covered:

- What were the chances of an individual coming into contact with a particle?
- What would happen to individuals if they came into contact with a particle? (Long and short-term effects). Was there an increased risk of developing cancer if an individual (or indeed an animal such as a dog) came into contact with a particle?
- How long would an individual have to be exposed to a particle before any effects were felt?
- If nature was left to its own devices, how long would it be before the particles would reach an acceptable or 'safe' activity level?
- Was the particles issue peculiar to Caithness, or were other UK nuclear sites experiencing similar problems (or indeed any other installations around the world)?
- Was any plutonium found in the particles and how can UKAEA be certain that the particles came from Dounreay?
- Why are particles not retrieved from the seabed?
- Could decommissioning of the diffuser chamber disturb any other particles that may currently be trapped in it?

Concerns and effects on behaviour

Concerns:

- Given the low chance of coming into contact with a particle (and specifically participants noted their amazement that so few particles had been found), the signage at the affected beaches was considered to be a little ‘over the top’. It was felt that such alarmist signage could potentially scare people off from using the beaches.
- Participants acknowledged that the particles issue had a low profile in the part of the health sector that they worked in. It was simply an issue that almost never cropped up in the work environment. What they had come across though was the potential risks to health of litter and other debris currently found on the beaches (which was a direct result of the beaches now not being cleaned properly).
- Concern was however expressed at the effect that particles in the environment would have on how visitors to the area viewed Caithness. In particular, there was concern that visitors could be put off from visiting the area and as such, there would be an adverse knock-on effect on the area’s tourist industry.
- Concern was also expressed at the lack of education and allied to this, misinterpretation of available information was considered to be an issue.

Effects:

- Participants acknowledged that whilst they would (and do) still visit Dunnet beach, Sandside beach was avoided. This was not solely due to the fact that the most number of particles had been found on this beach though – the hostile landowner was also a factor, as too was the fact that this was not the only beach in the area – the community had a choice of several (often better) other beaches.
- Participants feared that visitors were avoiding the area because of the fear of coming into contact with a particle.
- It was considered that the existence of particles in the off-shore environment hadn’t put people off from eating fish / seafood caught locally i.e. no effect in this regard.

Aspirations

- More and better education. Not only of the existing local community (across the spectrum), but also of the ‘outside world’. Tied into this, participants considered that more could be done by UKAEA to get the particles issue on the agenda at local schools.
- Stop the ‘scare mongering’.
- Tied into the education issue, it was felt that the poor perceptions currently held by both the local community and existing/potential visitors to the area also needed tackling. Whilst it was felt that the former was achievable, the latter was considered to be very difficult.
- UKAEA must be seen in the future as more open and transparent in respect of the particles issue.

Options

Preferences:

- Because of the technical nature of the subject, it was felt that solutions really must come from the experts.
- The group considered doing nothing as a wholly unacceptable way forward.
- The existing level of monitoring was not considered to be enough. Instead, more enhanced monitoring was considered to be an effective way forward. Monitoring should be carried out more frequently. Some participants felt that particles (if found) should be retrieved offshore rather than simply mapped. However others disagreed by stating that the retrieval of particles was a very risky activity for divers and that if it was known where the particles were (and they were doing little harm) then they should simply be left alone.
- Allied to the issue of perception, it was suggested that the name of the monitoring vehicle should be changed to something akin to 'Environmental Monitoring Vehicle'. It was also suggested that to ensure that a more holistic approach to beach quality was adopted in the future, UKAEA in partnership with Highland Council could consider picking litter up off the beaches at the same time as monitoring takes place.
- It was acknowledged that a heavy engineering solution would demonstrate that UKAEA were serious about the problem / particles issue. However, this was caveated by stating that such solutions could potentially disturb the particles further and cause wider environmental problems i.e. the situation would be made worse!
- It was considered important that a robust communications programme should also back up any final solution, although it was acknowledged that UKAEA had got better at this in recent years.
- Options that resulted in significant traffic movements should be avoided.

Criteria

Additional:

- It was considered that public perception was missing from the assessment criteria.

Priorities:

- Cost was considered to be of less significance than other factors (although it was noted that any solution did need to be cost effective). Indeed, it was suggested that cost should be taken out of the assessment process and evaluated later on when all other factors had been considered.
- The environment and health and safety (equally of both the public and personnel implementing the preferred option) were considered by participants to be the criteria of overriding importance.

Facilitator's impressions

Initially, this group were concerned about the level of input they could contribute to the best practicable environmental option consultation process. After a lengthy question and answer

session which, as participants agreed, demonstrated that their knowledge of the particles issue was limited, the group engaged in a valuable debate.

Although the particles issue appeared to be somewhat of a 'non-issue' in the part of the health sector that participants worked, as individual members of the local community, participants were primarily concerned at the general lack of reliable and digestible information. Education was considered key, as too was the need to tackle misconceptions and perceptions about how particles have affected the environment in Caithness.

Preschool children carers group

Date, time and venue of meeting

19 January 2006, 9.30-11.00am, Gaelic Playgroup, Thurso

Attendees

Both attendees did not return the form indicating permission to publish their names and hence their names are withheld

Facilitator

Alison Millward

UKAEA technical attendee

Frank Dennis

Background

- One person had lived in area all her life, the other for the last 3.5 years.
- We want simple facts. Commented that UKAEA might keep anything they were really worried about under wraps. Answer - that now under the Freedom of Information Act UKAEA would have to disclose information if requested, other than anything of a confidential nature such as how to make nuclear bombs. She responded by saying that she needs to feel confident about the information coming out of UKAEA.

Concerns and effects on behaviour

Concerns:

- Beach at Dunnet was very brown last winter. Was that the result of the monitoring work there? Answer – no, it was because of the storms. Hasn't stopped them using Dunnet, but usually uses Murkle.
- Other person doesn't use Sandside because prefers Dunnet and Reiss anyway and so problem at Sandside isn't an issue for them. What do the signs say? (Answer given).
- Even though the risk is low it is still a risk.
- It's not just here though. What about Dalgety?
- Why are there such high levels of cancer in the area (UKAEA attendee refuted this). There are two young girls in the area with cancer, a 30 year old and a 40 year old to her knowledge. She cannot remember any child in her time at school getting cancer.
- There's more danger from things washed up on the beaches from ships and boats such as oil drums.

Effects:

- Wouldn't go to Sandside because of the particles issue because has two young children. Sign has had the most impact at Sandside. Doesn't feel motivated to do anything about the problem herself.
- Guests at the B&B sometimes comment, but as a local you become complacent about the problems associated with Dounreay. Because I am not concerned about the risk I do not tend to delve for information.
- Annual sandcastle competition was cancelled in 2005 because Forest Rangers did not want to be seen to be acting in a negligent manner.

Aspirations

- Free of signs.
- Clean beaches
- Of no risk to users.

Options

Preferences:

- Waste of money to do anything about the particles because the risk is so low.

Additional suggestions:

- Would welcome an information sheet explaining what is going on and could be done. Should be written with a bit less detail than the newsletter.
- Assumed information sharing would be a part of any option, but if not make it a separate option.
- Do more research on all the health related issues and give us the information.

Criteria

Confirmation

- None thought to be irrelevant.
- Not sure if the environmental criteria is a big issue.

Additional:

- None suggested.

Priorities:

- Cost matters because of the low risk. But if I thought it had an impact on my children I would say spend whatever it takes.
- Health and Safety issues relate most directly to her concerns, but there are more health issues in Caithness than just the particles one.

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- Health and Safety and Socio-Economic are most important.

Facilitator's impressions

Information, or lack of it and its reliability were of concern to this group and particularly in relation to health risk issues, not just of the particles but other factors in the Caithness area as well. There was a strong sense of frustration and irritation in one person because of the knock on effects of the find at Dunnet. Lack of certainty about the low risk was fuelling their wider health concerns.

Reay and Melvich community group

Date, time and venue of meeting

14 January 2006, 2-4.00pm, Victoria Hall, Reay

Attendees

Cathleen McDougal (Resident)

Celia McDougal (Resident)

George McDougal (Resident)

Roy Godfrey (Resident)

Tim Huddleston (Melvich Community Council)

Three attendees did not return the form indicating permission to publish their names and hence their names are withheld

Facilitator

Daren Luscombe

UKAEA technical attendee

June Love

Background

Questions and comments raised by stakeholders:

- There were a number of questions regarding the source of particles (the shaft or the diffuser) and the effect on human health if contact was made with a particle.
- What is the human safety limit?
- **Why were large pieces of swarf not washed into the environment? More information to be provided – June Love**
- **Information available on sand dune and golf course monitoring – More information to be provided – June Love**
- Who put up the signs at Sandside and why did they put them up?
- Trust is an issue for UKAEA, ‘trust shattered’ following a meeting at Dounreay when someone said that ‘sand doesn’t move very much’. This is clearly wrong and UKAEA needs to work on building / establishing trust.
- Why is the new diffuser located next to the old one when solids were washed ashore from the old one – why not further out?

Concerns and effects on behaviour

Concerns:

- Concerned that the actual risk is not understood properly. People's perception is that there is a greater risk than is actually the case.
- Decisions are based on misinformation. Driving poses more risks than the particles issue.
- It's not particles that are the issue it is the signs at Sandside Bay.
- There is more risk from sewage than particles.
- Negative effect on tourism.
- Not content that the signs at Sandside are sufficient. Better information with comparison to other typical risks is needed.

Effects:

- Visitors are reluctant to visit Sandside Bay.
- Local people do not use the beach due to the message from the signs rather than the actual risk.
- There was a mixed opinion regarding actual risk with all but one member of the group considering that it was insignificant. One member not allowing his children onto the beach at Sandside whereas another allowed his grandchildren to visit reflected this.
- The issue has affected people's behaviour with regard to Sandside

Aspirations

- Would like beaches to be clear of particles but do not think this is possible 'everyone would like there to be no particles but this is not possible'.
- More informative signs so that people can make their own decisions.
- Use the best equipment available in the hope of being more effective in detecting particles.
- For the press to have better more accurate information.

Options

Preferences

- The solution needs to be proportionate to the problem presented.
- Onshore – more frequent monitoring.
- Onshore – maintain monitoring at current levels.
- Onshore – review the level of response in relation to the number of particles found
- Onshore – the 'bigger' options send out the wrong message resulting in poor image for the area.

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- Onshore – restricting access would be scare mongering.
 - Offshore – should retrieve particles if possible reasonable cost being considered. Not all agreed on this point and thought that retrieval was not necessary offshore.
 - Offshore – the current ROV monitoring without retrieval should be maintained.
 - Offshore – little appetite for large scale, complex engineering solutions. Do not dredge the seabed – this will destroy the environment to save the environment.

Additional suggestions

- Should be doing more monitoring and on more beaches, and be told of the results.
- Must provide information that can be accessed freely. Include information on comparisons with other common risks. Include all information on the website.
- More of this type of stakeholder engagement should be carried out (i.e. the outreach meeting)

Criteria

Confirmation

[No one objected to any]

Additional

- Performance in terms of providing information and increasing understanding of the issue (i.e. not just engineering strategy but must include education and information provision).

Priorities

- No clear priorities, environment, health and safety and socio-economic mentioned more in the discussion however.
- A natural assumption that technical issues and cost look after themselves.

Facilitator's impressions

With the exception of one member of the group, the participants generally considered there to be a very low risk from particles. This was reflected in the way their behaviour has been affected. For a group so geographically close to Dounreay and Sandside, it was surprising how little information they had previously received with regard to the particles issue. This was demonstrated by members of the group under the impression that the source of particles was the shaft rather than the diffuser and not understanding who erected the signs at Sandside Bay. This illustrates the need for better information to be made available - the group identified this necessary for a number of reasons.

Monitoring both onshore and offshore emerged as the favoured options with retrieval being reinstated for offshore finds where possible. Large-scale operations were not considered appropriate due to the nature of the problem and due to them sending out a negative message. Integration of information at beaches was seen as an important part of managing the issue aside from the 'engineering' aspects.

The issue of trust emerged and the need for UKAEA to build trust in the local community through the provision of accurate information.

The group welcomed the opportunity to learn more about the particles issue and what was being done about it. The group generally felt that their understanding of the issue had improved.

School group

Date, time and venue of meeting

16 January 2006, 2-3.15pm, Farr High School, Bettyhill

Attendees

Nine pupils (at least one from each year from S2 to S6 (13 to 18 years old)). Representatives also made up the school's Student Council. The school's Deputy Head Teacher, Stewart McPhail, was also in attendance.

Facilitator

Claire Brown

UKAEA technical attendee

Fiona Henderson

Background

A number of questions that broadly related to:

- How the particles issue affected those sat around the table.
- Why were more buildings being constructed on site if the site was being decommissioned?
- What would happen to individuals if they came into contact with a particle?
- Whether other countries in the world were affected by particles in the environment.

Concerns and effects on behaviour

Concerns:

- Concerned that the nuclear industry had acted irresponsibly in the first place. The release of particles (although unintentional) should never have happened.
- Some participants (and more particularly, their parents) feared using the beaches as they did not know what would happen if they came into contact with a particle i.e. what were the chances that they would come across one and if they did, what would happen to them.
- Other participants felt that given the low chance of coming into contact with a particle, the signage at the affected beaches (and Dunnet was specifically referenced) was considered to be a little 'over the top'. It was felt that such alarmist signage could potentially scare people off from using the beaches.
- Concern was also expressed at the effect that particles in the environment would have on how visitors to the area viewed Caithness & Sutherland. In particular, there was concern that visitors could be put off from visiting the area and as such, there would be an adverse knock-on effect on the area's tourist industry.

Effects:

- Several pupils' behaviour was simply not affected because of geography – as they lived too far away (Tongue in some instances), they and their families simply did not use the beaches affected by particles.
- A small number of pupils had been forbidden by their parents to go on any of the area's beaches.
- Of those pupils that were allowed to (and who did) use the beaches affected by particles there was a mixed response. Whilst most were allowed to visit Dunnet beach, none of the participants were permitted (by their parents) to visit Sandside. There was also no desire to visit Sandside - indeed their families' habit of avoiding Sandside was fully accepted.

Aspirations

This issue was not fully explored with this group of stakeholders due to time constraints.

Options

Preferences:

- Gut reaction from some was that there should be more than just monitoring, but do not know what.
- Any option implemented must represent value for money - £m should not be spent on something given that there have only been a relatively small number of particles found.
- Also, in implementing any option, UKAEA need to make sure that they are not causing any further environmental damage.

Additional suggestions:

- The group could not think of any further options that should be considered.

Criteria

Additional:

- The group did not consider that there were any assessment criteria missing.

Priorities:

- Cost was considered to be an overriding factor, followed by health and safety and environmental considerations (viewed on a broad par). Socio-economic considerations then technical performance were considered as the least important criteria.

Facilitator's impressions

This group was very focussed on needing to know more about the particles issue. It was felt that they didn't know that much about particles, which was reinforced by the fact that at the beginning of the session and throughout, a significant number of questions were asked about particles and the nuclear industry in general. It was also clear that some attendees had a level of 'misinformation'.

Notwithstanding this lack of baseline knowledge, it was clear that participants' behaviour had been modified to a degree by the existence of particles in the environment. Although not sure what else could or should be done over and above monitoring, it was generally felt by all that to carry on with the current monitoring (and retrieval/mapping) arrangements did not go far enough in tackling the particles issue. Cost effectiveness and the need to ensure that any option is not too expensive was an overriding factor for this group.

Scrabster Harbour group

Date, time and venue of meeting

16 January 2006, 2-4.00pm, Scrabster Harbour, Scrabster

Attendees

Brian Williams (Scrabster Harbour)

Donald Allen (Scrabster Harbour)

Facilitator

Daren Luscombe

UKAEA technical attendee

Joe Toole

Background

Questions and comments raised by stakeholders:

- Scrabster Harbour is happy with the current procedures in place for transferring particles onshore at Scrabster retrieved through offshore diving.
- The group is concerned that creelers are OK with the particles issue.

Concerns and effects on behaviour

Concerns:

- Do not want the issue to be presented out of proportion to avoid affecting the fishing industry in the area and the area generally.
- Do not consider that particles present a significant risk.

Effects:

- Although the risk is perceived to be low, one of the group members would not visit Sandside Bay but is happy to visit Dunnet. This is due to the negative publicity generated around Sandside.
- Fishermen work up to the FEPA exclusion zone.

Aspirations

- Would like to increase understanding of the issue from continued monitoring.
- Would like some degree of clean up off-shore and the exclusion zone to be lifted to demonstrate progress and an improving situation.

Options

Preferences

- Onshore – monitoring and retrieval preferred. Any more than this would create unnecessary publicity. More damage than good if much more work was done.
- Offshore – monitoring and recovery is preferred. If particles are located, they should be retrieved. In terms of cost and the negative publicity it could bring to the fishing industry and the area, dredging is not preferable and is out of proportion with the problem. Large scale operation could send out the wrong message when it is not considered the problem requires this level of management.

Additional suggestions

- No additional suggestions.

Criteria

Confirmation

[No one objected to any]

Additional

- The affect on the perception of the area and the affect on tourism should be considered.

Priorities

- Socio-economic and health and safety criteria are most important. Environmental and technical performance should naturally follow on from these.

Facilitator's impressions

This group expressed concerns about the potential affect on the fishing industry and the area generally if large-scale management options were carried out. The group considered the risk to be low however the perception of the nature of the problem at Sandside has influenced behaviour with one member avoiding the beach but happy to visit Dunnet. This is a view that has been observed elsewhere i.e. the nature of the problem being greater at Sandside not necessarily being based on an understanding of the number of particle finds or nature of risk but on their perception resulting from the Sandside signage and media coverage.

The group saw the lifting of the FEPA exclusion zone around the diffuser as an aspiration that if fulfilled, would demonstrate diminution of the problem and a positive outcome of any management option. The preferred management option for both onshore and offshore was monitoring and retrieval.

Sea Cadets and Sea Scouts group

Date, time and venue of meeting

17 January 2006, 7-8.30pm, Sea Cadet HQ, Thurso

Attendees

Kevin Tait (Sea Cadet Leader)

Six attendees did not return the form indicating permission to publish their names and hence their names are withheld

Facilitator

Alison Millward

UKAEA technical attendee

Frank Dennis

Background

Questions and comments raised by stakeholders:

- What is the level of risk? Answer given.
- Is the river monitored? Answer – no.
- Sea Cadets and Scouts operate throughout Thurso Bay and up the river. Sea Cadets can also operate within 3 nautical miles of a vessel. They have also used the beaches for events and camping activities.
- Mention was made that Sea Cadets have ceased activities at Dalgety Bay, where problems associated with radioactivity from luminous dials used in war time installations have recently been discovered.
- From their knowledge of tidal flows, they thought particles would be likely to wash up on Thurso East, Murkle and Dunnet.
- Has anyone asked the local community at Dunnet what effect the particle find there has had on them? Answer – yes.
- Will new technology mean that we are likely to find more, not fewer particles in the future?
- Surely most of the particles are effectively being stored in a natural depository i.e. the seabed sediments? Answer – yes but they can be disturbed and move through the water.

Concerns and effects on behaviour

Concerns:

- Should be monitoring all the beaches.
- I don't know enough about it but parents ask us not to use Dunnet.

-
- Weil's disease and health risks associated with green algae and sewerage in the water are of more concern than the particles.
 - No one tells us enough.
 - Not really concerned about particles as he feels they are of low risk, but would not authorise groups to use Sandside purely to protect parents' peace of mind. It's an issue about public education.
 - 20 years ago a young girl who regularly used Sandside beach died of cancer. This greatly affected the whole community and people stopped using that beach.
 - UKAEA has done a poor job of giving out information. The monitoring activity scares people when they see it happening. You need to let people know what is going on and why. The beaches empty when the machinery turns up.

Effects:

- Used to hold camps and picnics at Sandside but no longer. Not a real problem because there are other beaches that they can use.
- The cadets had heard about the particles problem on the news and in the papers but it had not affected their behaviour.

Aspirations

- May end up with a new nuclear plant at Dounreay in the future, so the problem might still persist in 20 years time.
- Be able to use the beaches freely without any worries or concerns.
- Seeing a big sign that says this beach is clean.

Options

Preferences

- 2, 9, 11 and 12 seem feasible.

Additional suggestions

- Should be doing more monitoring and on more beaches, and be told of the results.
- Must provide information that can be accessed freely.

Criteria

Confirmation:

[No one objected to any]

Additional:

[None suggested]

Priorities:

- Cost and health and safety were most important to this group, though one thought most other people would say that the environmental criteria were the most important. People mainly fear for their own safety.

Facilitator's impressions

This group had been affected by the concerns and demands of parents. They did not feel they had been well enough informed about the issue. At the end of the discussion some said that they would use the affected beaches as individuals, whilst still feeling wary within themselves, but they would not let their children use them. Others would simply use alternative beaches. The leaders were encouraged to raise the issue with their scouts and cadets at forthcoming meetings and ask their young people to complete the questionnaires.

Socio-economic group

Date, time and venue of meeting

18 January 2006, 9-11.00am, Naver Business Centre, Thurso

Attendees³

Anna McConnell (Caithness Partnership)

George Bruce (Chamber of Commerce, Mental Heath Partnership, ex-Dounreay employee)

Hilda Morrison (Business Club, Naver Business Centre, tourist business)

John Banister (Forss Hotel and Chamber of Commerce)

Peter Body (Naver Business Centre and various other businesses)

Two attendees did not return the form indicating permission to publish their names and hence their names are withheld

Facilitator

Alison Millward

UKAEA technical attendee

June Love

Background

Questions and comments raised by the stakeholders:

- Lived at Forss, all his life and works at Dounreay. Didn't know about particles issue until it came into the press recently. Played at Brims and Crosskirk as a child.
- We've got good brains at UKAEA and the regulatory authorities, so why do we still not know where the particles came from and where they have spread too?
- What is the extent of the particles problem within the environment?
- What is the potential impact of the particles in the environment?
- There is a lack of knowledge about the extent of the risk. Is the level of publicity equivalent to the scale of risk?
- We need accurate, reliable information about risks. Most people will not read the Technical Résumé.
- Apparent openness of UKAEA about the particles issue makes him feel more comfortable that UKAEA's PR is now working better, but it needs to build on that.
- Need a practical and economic solution to the problem.

³ Note that this group was a group of stakeholders with socio-economic interests and was not the Caithness Socio-economic Strategy Group formed in 2005.

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- We need to know who is responsible for what bits of the beach – the Crown and/or private landowner. There was a view in the group that a private landowner owned the whole of Sandside beach (i.e. down to the low water mark).
 - Landowner must have known about the particle problem when he bought the estate in 1990.
 - Make the explanation of relative risk simple.
 - Information from a third party would be preferable to increase the sense of reliability and independence.
 - What would the outcome be of a particle becoming lodged in the ear whilst swimming?
Answer – do not know for certain – will find out and report back [Entec to respond].
 - Can UKAEA provide figures on the relative longevity of past employees? Many seem to be living into their 80s and 90s.
 - Dounreay brought work to Caithness.
 - Many industries have risks associated with them e.g. tractors with no safety cabs that overturn and kill farm workers.
 - Would be impossible to pick up all the particles.

Concerns and effects on behaviour

Concerns:

- No concerns at present. It happened a long time ago. Should not go overboard in dealing with it – money-wise.
- Concerned about the negative impact of the publicity on the area. Caithness gets labelled as Dounreay and vice versa.
- Dounreay does not do enough to defend itself. Should explain about the natural levels of radioactivity in the background.
- Grey area relates to the level of understanding within the community. He has been assured that the risk is very low from talking to people he trusts. Public perception is the issue.
- What is the danger? Experts should compare it to other things. At a meeting of the Rotary Club, a Geiger counter was passed over a jar of coffee and set it off. Answer – the risk was explained and this re-assured one member of the group but was challenged as conflicting with the explanation given by the Sandside landowner.
- Minority view is always given a higher profile by the media and not enough effort is given to countering that.
- The signs must terrify visitors.
- Whose experts do you believe? Answer – information was given about the forthcoming SEPA report and its significance as an independent source of information on risk.
- Still concerned about where the particles came from. Was it the shaft? Are they still coming from the shaft? Answer – no to both questions.

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- Problem is that you cannot see the particles.
 - Greatest danger is the effect on public perceptions. TV programme reported that particles have been coming onshore over 15 years at Dalgety Bay, yet there are no signs on their beaches. The response has to be proportionate to the risk.
 - We used to clean the beach in front of our house with the kids. Should we still be doing that and how do we dispose of the plastic we pick up?
 - Holidaymakers may not appreciate that there are alternative beaches, and assume that all the beaches are affected.
 - Will you put interpretation out at Dunnet? Answer – yes, but not at Sandside because landowner is unlikely to give permission.
 - Sandside landowner is the main problem for the county. It is obvious that there is a hidden agenda, because if there were a danger on your land most would consider it their public duty to allow monitoring.
 - Concerned that any talk of a possible new reactor at Dounreay will create new opportunities to drag up problems for the past, which will fuel the negative publicity.
 - At the local level we are more concerned about the impacts of wind energy, rather than nuclear energy.

Effects:

- Regular customers to a tourism business do not seem to be affected by the issues but new visitors must be.
- If the problem gets worse, over the longer term the impact on tourism could be highly significant. If the problem stayed the same or reduced, it would go away as an issue.
- Not short of other beaches to use, so not a problem if we can't use Sandside.
- I've walked on Sandside and Dunnet twice in the last month. May be I am taking a cussed approach to the issue. Chap at the Thurso exhibition told me that I could take precautions like washing my hands following a visit to reduce the risk.
- As a past member of the Boys Brigade, used to go to Sandside for barbeques. Thinks leaders today would take a different view to appease worried parents, or at least be careful to get parental permission before taking the boys onto Sandside. Signs are worrying.
- Would not direct new visitors to Sandside.
- Knows people who will not take kids to the affected beaches.
- An Australian visitor wanted to be driven past Dounreay at high speed, following a report of a particle find at the time of their visit.

Aspirations

- A clean area defined as generating the same radioactivity levels as an unaffected beach such as Sinclair.

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- Would like to know that the problem isn't spreading e.g. to Strathy or Sinclair Bay, if all the particles could not be recovered.
 - Will be impossible to remove all the particles and they are only half as active now as when they were released 30 years ago. We don't think anyone has been affected.
 - Difficult to be bullish because of the lack of knowledge about what happened 30 years ago. There will also be technological advances that will move us on and may generate new information that may be encouraging or, conversely, worrying.
 - Expect there to be less risk than there is now.

Options

Preferences:

- Yes to 2 and 11 [a view held by a number of the group]. Could reduce frequency of monitoring if number of finds starts to reduce, but continue it to provide reassurance.
- 9 and 21 are happening anyway and will continue to happen.
- 20 is operating too.
- If accept that the hot spots are just off Dounreay, 18 might be a goer if you take the sediment away, otherwise would not want them to be dispersed [agreed by two members of the group]
- Maybe just sucking up particles from the surface (13) would be better than 18.
- 15 would be too disturbing and carries a low likelihood of success.
- Locations for monitoring should be reviewed and added to – we should be monitoring for the unexpected.

Additional suggestions:

- Buy the beach at Sandside – might be a lot cheaper than the other options [two agreed].
- Must put effort into remediation of the negative publicity. But must not allow UKAEA to use spin.

Criteria

Confirmation:

- Deliverability by 2036 may be irrelevant, because decommissioning may take less or more time than that. Emphasis should be about continuing to monitor until the level of activity has reduced to a level that gives people confidence that there is no risk.
- Re socio-economic criteria, any decision by someone to come back to the area will depend on a wide range of factors, not just the particles issue or Dounreay as a whole.
- We seem to be getting a steady stream of people coming into the area to work or retire, and house building is very buoyant. Dunnet Caravan Park are upgrading and extending – so they seem confident too.

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- Need to capitalise on positive aspects of Dounreay.
 - Presumably only looking to tweak the list of criteria because you must have been using this approach to justify the current management strategy?

Additional:

- Public perception should be a criterion and across a number of issues, not just tourism.

Priorities:

- All are important.
- Environmental criteria are the most important.

Facilitator's impressions

This group had many questions and therefore need much more information and of a reliable and independent status. Most were keen on a proportionate and economic approach being taken to the selection of the management option. Including a criterion and management element for public perceptions was widely supported.

The additional option suggested of buying the beach at Sandside is notable.

Surfing and kayaking group

Date, time and venue of meeting:

17 January 2006, 4-6.00pm, Tempest Café, Thurso

Attendees:

Anthony Cundall (Caithness Kayak Club)

Ken Nicol (Pentland Canoe Club)

Eight attendees did not return the form indicating permission to publish their names and hence their names are withheld

Facilitator:

Claire Brown

UKAEA technical attendee:

June Love

Background

Following an explanation of the background information, attendees raised a number of questions that broadly related to:

- What would happen to individuals if they came into contact with a particle? Specifically, what were the risks of coming into contact with a particle and how would it affect you if you did (both in the short and long term).
- How many times is the ROV deployed and how far out offshore does it go?

Concerns and effects on behaviour

Concerns:

- Prevention is better than cure – the release of particles into the environment should never have happened in the first place.
- Signage – difficulties with groups who use beaches (public indemnity/insurance issues). Concerns raised by the kayaker group – leaders would not contemplate using Sandside for family days and BBQs due to the bad press and the signs and the potential for litigation. Also loss of business (Thurso Surf School). Commercial outdoor organisations visiting the area keep away from ‘these’ beaches due to the signs and the need to explain to a client why there are being taken to a beach with a warning sign. **Action on JL – discuss with UKAEA legal department the issue of an indemnity letter for Thurso Surf School and the Kayak Club.**
- Signs need to be more informative and less sensationalistic. Also need to consider signage from kayakers’ perspective (do not see when accessing the beaches from the sea, e.g. there is nothing to prevent kayakers landing on the Dounreay foreshore).

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- Concern that the particles issue could ruin local businesses – image of the area shattered.
 - Not overly concerned as individuals.
 - Although there is a risk (which in itself causes concern), it was acknowledged that risk is a matter of degree.
 - Concern over the perception of the outside community. Concern was also expressed at the effect that particles in the environment would have on how visitors to the area viewed Caithness. In particular, there was concern that visitors could be put off from visiting the area and as such, there would be an adverse knock-on effect on the area's tourist industry.
 - Will always be fighting the media – public perceptions are very negative – need more education.
 - Too many academics that are too narrowly focused in their perspectives. Need to inject more common sense into the particles issue and specifically into the strategy as to how they should be handled / managed.

Effects:

- Many surfers do not now go to Sandside (although some do surf at the edge), but still content to surf at Dunnet.
- Peer pressure actually stops people from using some of the beaches – particularly Sandside. Afraid of what other people would think if they took youngsters onto the beach (irresponsible).

Aspirations

- The environment in the local area should be left how it was found i.e. pre-Dounreay. But it was questioned as to whether this was realistic.
- Would like to see the reputation of the area 'cleaned up' (as well as the physical environment).
- Better information – more accessible and accurate. Signage more informative. Achieved via education and more liaison with national sports groups and governing bodies such as Sport Scotland and tourist groups/industry such as Visit Scotland. It was felt that if people potentially visiting the area required more information, then they would either go to local facilities for information or their national bodies / organisations.
- Information centre open 7 days per week in Thurso. Also more accessible information needed at the tourist offices both within and outwith the area (Inverness specifically mentioned).
- Full body monitoring service.
- Need to ensure that those particles off-shore do not make it on-shore.

Options

Preferences:

- Enhanced monitoring was required – core sampling of the beach in addition to the current monitoring programme was mentioned. This would enable UKAEA to investigate the existence of particles further down in the beach and prove/disprove their existence.
- From the kayakers' perspective, monitoring of the small inlets that feed into the beaches / sea was also required as these can be used/accessed.
- Regarding the need for enhanced monitoring, it was suggested that UKAEA (in conjunction with Highland Council), could provide discrete beach showers for beach users such as surfers, bathers and kayakers. This would not only enhance the area's attraction for water sports enthusiasts, but a sand trap at the bottom of each shower could collect sand from beach and sea users, which UKAEA could take away periodically for monitoring. Toilet facilities already exist at some beaches so this would be an enhancement.
- Preferred option for this group was enhanced monitoring and retrieval backed up by a robust educational programme and the provision of some limited services (e.g. showers, public information centres/boards etc). Although it was acknowledged by some in the group that there could be perception complications surrounding an enhanced programme of monitoring – so would need to be discrete.
- The surfing and kayaking community would not support options that would require the wholesale removal or movement of sand (would affect the quality of the area as a prime spot for surfing and kayaking).
- Expensive options would also not be supported – £m would be disproportionate to the size of the issue. Money should be spent on better things, although it was acknowledged that if UKAEA started to spend money on community facilities, it could be construed that the company were trying to pay the public off.
- Also in connection with the cost of an option – it was felt that if an expensive solution were implemented, people's perceptions would be that particles in the environment were a large problem.
- Doing nothing was considered to be an unacceptable solution – not least from a public perception perspective.
- Also, in implementing any option, UKAEA need to make sure that they are not causing any further environmental damage.
- On education front, it was important that suitable people were recruited to 'spread the message' in an informative, accessible yet accurate way. It was suggested that kayakers and surfers could be used to speak to others as they will use 'the same language' and not the technical language of UKAEA

Criteria

Additional:

- The group did not consider that there were any assessment criteria missing. But what about perceptions?

Priorities:

- Environmental criteria were viewed as being of overriding importance.
- Cost was also recognised as being of importance.
- Technical performance was not viewed as a key criterion, as it was felt that it would probably drop out of consideration of all the other issues.
- It was noted that health and safety considerations were not only important when considering the effects than an option may have on those individuals implementing it, but also on those individuals using the beaches / off-shore areas.

Facilitator's impressions

This group was very well attended and the meeting was lively, which indicated a level of concern and interest in the particles issue. By and large, they were a group that considered that they had access to little 'understandable' information about the particles issue and therefore welcomed the more informative parts of the session.

The need for further education and information was a key concern (and aspiration) of this group. They felt that the current 'void' was having an adverse effect on the surfing and kayaking communities both within and outwith Caithness.

There was no desire to see an expensive or heavily engineered solution being implemented – rather an enhanced monitoring programme, with the results (conveyed in an accessible way) made available to the surfing and kayaking communities.

Finally, this group were very keen to be involved in subsequent stages of the BPEO process – particularly the appraisal exercise. Thurso Surf School representative was seen as a key contact in this regard as it would provide UKAEA with the perspective of not only a user of the beaches and off-shore environment, but also that of a local business directly affected by the particles issue. The group also requested having sight of the write up of their meeting, before the report on the outreach meetings was finalised.

Post meeting comments

On feedback on a draft of this meeting's record, a note was made that the Pentland Canoe Club has links into the National Governing Body (the Scottish Canoe Association) and with the outdoor centres/colleges using the area (e.g. Glenmore Lodge and the North Glasgow College).

UKAEA employees and contractors group (group one)

Date, time and venue of meeting

17 January 2006, 10-11.30pm, D1300 Visitors Meeting Room, Dounreay site

Attendees

Bob Hendrie (Vulcan)

Brian Dodds (UKAEA)

Caroline Reid (Vulcan)

Charlie Stewart (UKAEA)

Martin Howse (UKAEA)

Neil Clyne (Vulcan)

One attendee did not return the form indicating permission to publish their name and hence their name is withheld

Facilitator

Daren Luscombe

UKAEA technical attendee

June Love

Background

Questions and comments raised by stakeholders:

- Dispersion modelling needs to be re-examined due to the difference in density of particles, i.e. particles generated following one incident involving a fire when reprocessing Dounreay Fast Reactor Fuel are low density uranium/niobium/iron oxides that could travel further.
- The site could be used for a new nuclear power station.

Concerns and effects on behaviour

Concerns:

- The attention that the issue receives is totally 'out of proportion' with the problem. There are 'fewer particles than estimated'.
- Concerned and frustrated that the Dalgety Bay particle finds were reported as 'worse than Sandside but still OK'.
- 'Sandside is a tip, messy, it is covered in rubbish and smells from seaweed'.
- Workers at Dounreay have information provided but 'what do others have to go on?'
- What about raw sewage being pumped out and the risks associated with this? Few people complain about the sewage discharges from the site.

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- How can naturally occurring radiation be balanced / communicated with the additional dose that may be received from a particle. Concerned that information is not being provided.

Effects:

- None noted. The discussion focussed on concerns and frustrations.

Aspirations

- Beaches used as they are now – freely.
- Unrestricted access with information provided so that people can make their own decisions.

Options

Preferences:

- Prefer onshore and offshore monitoring with recovery. Some support for monitoring only offshore with onshore monitoring and recovery.
- Some support for targeted recovery offshore for areas of higher particle concentration.

Additional suggestions:

- Review management plan to enable technological advances to be integrated into the management strategy.
- Provide touch screen / real time information at the visitors centre, the <http://caithness.org/> website, town hall and the visitors centre.

Criteria

Confirmation

[No one objected to any]

Additional

- Ability of the management strategy to communicate information and educate.
- Ability of the strategy to generate long-term rather than short-term employment.

Priorities

- Health and safety was the most valued set of criteria followed by cost and environment on an equal basis.

Facilitator's Impressions

The group were generally well informed about the issue. Many of the concerns related to placing the issue into a broad context – whether this be comparing to other occurrences of ‘particle’ contamination such as Dalgety Bay, other types of pollution such as risks from sewage and littered beaches or placing the particle hazard in the context of other natural forms of radiation.

The group preferred continuation of the current arrangements with regard to monitoring and retrieval onshore and generally, would like to see retrieval offshore reintroduced.

UKAEA employees and contractors group (group two)

Date, time and venue of meeting

17 January 2006, 10.30-12.00am, D1300 Conference Room, Dounreay site

Attendees

Anne-Marie Park (Civil Nuclear Constabulary)

Bill Thomson (UKAEA, Prototype Fast Reactor)

Colin Turnbull (UKAEA, Safety, Health and Environment, Dounreay Fast Reactor)

David King (UKAEA, Business Support Group, Prototype Fast Reactor)

Doug McAlister (RMC)

Three attendees did not return the form indicating permission to publish their names and hence their names are withheld

Facilitator

Claire Brown

UKAEA technical attendee

Joe Toole

Background

Following an explanation of the background information, attendees raised a number of questions that broadly related to:

- Whether UKAEA knew for certain how many particles had been released into the environment.
- Apart from the diffuser, were there any other sources of particles?
- What would happen to individuals if they came into contact with a particle?
- How long would it take for the particles found in the environment to reach 'safe' / acceptable levels of activity?

Concerns and effects on behaviour

Concerns:

- Given the low chance of coming into contact with a particle, it was felt by some that the notices at both Sandside beach and Dunnet beach were alarmist and sensationalist. Also, signage was not informative enough – more information required – currently a void of reliable information.
- Concerned that UKAEA are seen to be doing the right thing – concerned that they are probably not at the moment.

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- Concern was also expressed at the affect that particles in the environment would have on how visitors to the area viewed Caithness. In particular, there was concern that visitors (and surfers were particularly cited) could be put off from visiting the area and as such, there would be an adverse knock-on effect on the area's tourist industry.
 - It was acknowledged that there was a considerable level of 'unrest' in particular groups such as the surfers, who were generally very unhappy (and concerned) about the existence of particles in the environment.
 - Participants were worried that the particles issue was being singled out as a key adverse effect on beach quality. In actual fact, several attendees cited sewage and litter found on the beach as being more concern viz. a viz. beach quality.
 - Lack of effective communication with the local communities and other stakeholders in relation to the particles issue. However, concern that even if £m were spent on effective communications, not too sure how much difference it would make (tied in to a lack of trust in UKAEA). Damage may already have been done!
 - Lack of trust in UKAEA.
 - Concerned that the press sensationalise anything to do with the particles issue and generally blow it all out of proportion.
 - Public do not understand that UKAEA is constrained by Government and Government funding. Significant constraint that needed to be conveyed to the public.
 - Concerned that the industry has acted irresponsibly – certainly, steps should be taken to ensure that such a release never happens again.

Effects:

- Some participants acknowledged that the existence of particles in the environment had absolutely no affect on their behaviour whatsoever – they did and would continue to use all affected (and other) beaches in the area, including Sandside.
- Most participants, however, noted that because of geographical factors, they would give preference to one beach over another – in other words their choice was not simply dictated by the issue of whether particles had been found on a beach. When pressed however, a number of participants in the group did say that they would (and do) avoid Sandside beach, but that the discovery of a particle at Dunnet had not yet affected their use of this beach.
- It was noted that Sandside beach had, historically, been a popular location for people. However, it was very much felt that generally people avoided this beach. Anecdotal evidence was offered explaining that friends and family had stopped using the beaches in the area where particles had been found.
- Local residents in the immediate vicinity of the site do not dig over their gardens (for fear of disturbing a particle or general radioactive contamination) or plant vegetables.

Aspirations

- A more trusted UKAEA.
- Better communication – need to produce more effective literature, which sets out information in a clear, uncomplicated yet accurate way.
- When looking to the future – must go beyond the next 20 years – is a problem / issue that has a much longer life than this.

Options

Preferences:

- Doing nothing was not an option – it was not considered morally (or publicly) defensible.
- Monitoring is an absolute must, not least to establish the baseline and to ensure that the public ‘perceive’ that something is being done about the particles.
- Steps should not be taken to retrieve particles off-shore, as in the absence of the technology required to do this without divers, it was felt that the risks were too great – sooner or later a diver was going to get killed.
- Care must be taken to ensure that any option implemented does not have further significant adverse effects on the environment (indeed, it was recognised that current sampling has an adverse effect on the environment). It must also be technically feasible and not have significant economic implications.
- Restricting access to the beaches was not considered a viable option (although continued restriction of access to the Dounreay foreshore was considered reasonable).
- The particles management strategy must go beyond 2036 if the preferred option turns out to be monitoring only. This is a direct result of the half-lives of the active particles stretching well beyond this period. There must be a commitment to much longer term monitoring.

The group could not think of any further options that should be considered.

Criteria

Additional:

- Public perception and trust should be a further assessment criterion.

Priorities:

- All criteria were considered to be important.
- Cost was considered to be an important, although not overriding factor (it was generally seen on equal terms as the environment). This was particularly because the money spent was effectively tax payers money (UKAEA funded by central Government) – would be politically difficult if a less than cost effective option were seen to be being implemented. Specifically, it was stated that the public would ask what they could get instead for the same amount of money if an expensive option were chosen e.g. new school, new community centre etc.

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- Cost should be taken out of the BPEO and considered separately (for clarity's sake).
 - Safety considerations (for both the public and the workers implementing the option) were considered to be a very important criterion.

Facilitator's impressions

Unsurprisingly, this group was very well informed about the particles issue. Notwithstanding this, there was a very healthy (albeit technical at times) debate at the start of the session, which indicated that even this relatively well informed group still had some misconceptions / areas of their knowledge lacking.

It was clear that although the vast majority of the participants' behaviour had only marginally been modified by the existence of particles in the environment, anecdotal evidence suggested that the issue had more widely affected their friends, families and neighbours' behaviour. This generally manifested itself in individuals not visiting Sandside beach, although it was acknowledged that this was partly down to geographical considerations and not just the particles issue.

The current lack of public trust in UKAEA and the lack of accessible and reliable information made available to the general public was a major issue for this group. Regaining the public's trust and altering people's perceptions of the particles issue was viewed as a major challenge for UKAEA. Furthermore, this group felt that any particles management strategy should be proportionate to the risk associated with the particles issue, and that health and safety considerations (relating to the general public and UKAEA/contractor personnel) should be of paramount importance when determining the best practicable environmental option.

Post meeting comments

On feedback on a draft of this meeting's record, a comment was made that the lack of trust is not only in UKAEA but also it was thought that there 'is a public opinion of a much greater lack of trust in the Government for DTI and NDA, and also the other regulators as NII and SEPA.'

UKAEA employees and contractors group (group three)

Date, time and venue of meeting

17 January 2006, 10.30-12.00, D1300 Lecture Theatre, Dounreay

Attendees

Alan Scott (Chairman, RWE Nukem)

Brian Henderson (Civil Nuclear Constabulary)

Ian Pearson (UKAEA, Archives)

Jim Cassidy (Fathoms Diving)

Kenny Porteous (UKAEA, Fire Service)

Two attendees did not return the form indicating permission to publish their names and hence their names are withheld

Facilitator

Alison Millward

UKAEA technical attendee

Frank Dennis

Background

Questions raised by the stakeholders:

- Question of whether or not the heavier and more reactive particles (which tend to be found at greater depths and in association with sea potatoes and slugs) are being buried deeper and deeper into the seabed sediment because of bioturbation, remains unresolved.
- Do you get more particles washed up after a storm? Answer - 'no'.
- What is the level of risk? 1:1,000,000,000,000,000.
- Has the risk been calculated for a particle becoming lodged in an open wound or in an eye? Answer - yes for an open wound, no for an eye, but it would all depend on the length of time the particle was in contact with the body.
- We need to take a common sense approach, because we are assessing risks all the time e.g. smoking, flying etc. The difference with these risks is that you have a measure of control over them and you would know if you had taken a risk e.g. by swallowing some weed killer.
- What was found at Dunnet? Answer – one particle definitely from Dounreay, a piece of radioactive plastic, source unknown, and stones with natural radioactivity. Comment from stakeholder – fishing activity could have dragged this particle up to Dunnet, rather than the waves.

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- If we do nothing (Options 9 and 21) how long would it take for the problem to decay?
Answer – 300 years for the large particles to decay to a level of activity that posed no risk.
 - “I am very sceptical, but loyal to UKAEA at the same time”.
 - UKAEA still puts out information that is not totally true, relating to incidents on site – “They are very clever with words”.
 - Prior to the letting of the first diving contract, a UKAEA spokesperson said that they would not find any particles offshore. They were found and within the first few days of diving.
 - There was some disagreement between one member of the group and the UKAEA attendee about the pattern and cause of particle movements offshore.

Concerns and effects on behaviour

Concerns:

- Swell action e.g. from spring tides may have a greater effect on disturbing and transporting the particles than stormy conditions as many currently believe.
- People believe there is a risk when there isn't.
- People are turned off by statistics.
- People are sceptical because the Health Protection Agency and other authorities will not publish risk and safety information. If they did it would be easier to work out what to do about the problem.
- We need to understand the relative risk. Just saying the risk is low is meaningless.
- This is a Public Relations issue and it matters to UKAEA, so we should publish information about relative risks even if SEPA doesn't want us to.
- “Perception is truth” in this day and age of media dominance.
- Failure to find a record of the 1984 particle does not necessarily mean that it does not exist, only that we have not yet found it, but this created another PR disaster as it was interpreted that UKAEA had something to hide.
- Maintain the control measures because you can't guarantee a 100 won't wash up somewhere, the week after you have taken the signs down.
- Customers at his shop have commented on the particle issues, which he has acknowledged but not reacted to.
- The mess is nothing to do with science, and is all about information and perceptions, and this makes him sceptical.
- Issue comes up in his life once a week.
- Is it a problem? Or only because we have said it's a problem?
- Having FEPA zone says it's a problem. Lift it as soon as possible if the risk proves to be very low.

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- We need to know whether the model predictions about movements and concentrations of particles are correct. We need more information from areas in deeper water that we can now survey with the Remotely Operated Vehicle e.g. off Strathy Point.
 - The way in which problems arising elsewhere e.g. at Dalgety Bay, are unfairly compared to the problem at Sandside, creating the perception that the other problem is not as bad as at Sandside, when in fact it may be a lot more damaging to the marine environment.
 - UKAEA have committed to restore the environment of Dounreay, but will they be selective and ignore the particles problem?
 - It will not cost billions to solve the problem as has been reported.

Effects:

- Would walk on Thurso and Dunnet, but no longer on Sandside beach as a result of the issue although he feels that there is no risk. So seems to have subconsciously changed his behaviour without knowing why.
- Following the find at Sandside in the 1980s, his family did change their behaviour but he is not sure whether that was because of their concerns, the signs or what.
- “Only a mug would ignore it ” [i.e. the warning signs].
- Can no longer take beaver scouts down there, mainly because of parental concerns.
- Wary of telling visitors, customers and acquaintances that he works at Dounreay.
- Still walks on Dunnet and doesn't worry about the particle find there.
- Would take any guidance offered. If particles were still there at Sandside, but someone said it was safe to use, he would use it. Still uses the far beach at Sandside.
- Acknowledging that there is a big margin for error, it would still be useful to have control measures in place [i.e. signs or other restrictions as necessary]
- Would stop kids going onto Sandside now, although used to in the past.
- Finds himself in a difficult position as he goes to the same church as the owner of Sandside and does not know whether or not to discuss the issue with him.
- Having several beaches to use lowers the sense of it being an issue.

Aspirations

- Be able to take the beavers for a sausage sizzle on Sandside again. Sandside is very flat and so the beavers are very visible and you cannot lose them!
- Stop the particles coming onshore.
- Signs taken down within 10 years which would be good for the area as a whole, not just Sandside.
- Free access at Sandside, for the sake of all the beaches in the area and especially those currently unaffected by particles.

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- Have the technology to remove all the particles.

Options

Preferences:

- Put a recovery mechanism onto the ROV (11)
- Monitor and recover (2 and 11)
- 2, 11 and 13 – targeted approach to areas of high activity and at the source of the pollution at the outfall.
- Resist 7 and 20 – lift restrictions as soon as possible.

Additional:

- Hoover up the contaminated seabed.
- Do not hoover up the contaminated sea bed because that would totally destroy the marine habitat.
- Wait for the findings of further ROV work at greater depths at Strathy Point and Brims.
- The more we appear to be doing the more heightened the sense of a problem will become. Because this is mainly a PR problem, spend the money on a PR solution.
- Provide suitable information (possibly from an independent body, rather than UKAEA) and allow people to decide for themselves about the risk, in combination with a minimal approach i.e. monitoring & recovery. However, this might not work because UKAEA has done too much damage to itself in the past through poor PR. There is now a lack of trust [to believe in what UKAEA says] that would take years to overcome.

Criteria

Confirmation:

- All are OK but there is a step missing. You cannot assess the options with the criteria until you have decided what you want to achieve i.e. the desired outcome. You cannot compare options if they would achieve different end points.

Additional:

- The affect of an option on people's perception of the area should be a criterion– and on people from further afield, like the Central Belt.

Priorities:

- Health & Safety is the most important category [a majority view]. The loss of 2 divers doing the monitoring work is not worth it when compared to the million to one chance of a member of the public coming into contact with a particle.
- Costs are very important because the money could be spent on other things.

Facilitator's impressions

Most people's behaviour had been affected but most could not say why precisely. They regretted the lack of information from a range of authorities, not just UKAEA, and this had made them sceptical, untrusting, and possibly over cautious about the issue. Any information provided in the future must be truthful so that they can make up their own minds, even if the scientists appeared to disagree about an issue. A key concern was to be given information about the relative risk of the particles compared to other, comparable types of risk over which the individual may have no control.

The majority favoured a low key management option: ongoing monitoring and recovery, with some targeting of hot spots and the area around the diffuser chamber. One thought it difficult to decide until the results of furthering monitoring in deeper water were known and could validate or invalidate the theoretical model of particle movements.

If the risks were proven to be very low, the signs and exclusion zones should be removed as soon as possible. Health and safety criteria were important to most and cost to some. An additional criterion assessing the effect of an option on public perceptions was suggested and widely supported by the group.